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Brown-headed Cowbird's Fatal Attempt to Parasitize a Carolina Chickadee Nest

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ABSTRACT.—On 5 June 2003, a female Brown-headed Cowbird (*Molothrus ater*) was found dead in a Carolina Chickadee (*Poecile carolinensis*) cavity nest near Bucyrus in Crawford County, Ohio. The cowbird had little room in the cavity and likely could not remove itself after laying an egg. Carolina Chickadee nests are rarely parasitized by brood parasites, and the size of their cavity entrances likely limits parasitism by Brown-headed Cowbirds. This is the first known instance of a Brown-headed Cowbird mortality after laying an egg in the cavity nest of a host species. Received 6 September 2005, accepted 21 March 2006.

More than 220 avian species reportedly have been parasitized by Brown-headed Cowbirds (*Molothrus ater*; Lowther 1993). Whereas the Carolina Chickadee (*Poecile carolinensis*) is an uncommon host species, there are a few records of Brown-headed Cowbirds parasitizing that species (Friedmann 1938, Goertz 1977). The closely related Black-capped Chickadee (*P. atricapillus*) also has been parasitized, and individuals have been observed feeding Brown-headed Cowbird fledglings (Lowther 1983). Such observations suggest that these chickadee species are capable of raising the young of Brown-headed Cowbirds, but that some mechanism may be limiting Brown-headed Cowbirds from taking advantage of these potential host species more often. Cavity nesting seems to offer some pro-

tection from brood parasites, as cavity nesters have been found to have low levels of parasitism (Strausberger and Ashley 1997). Female Carolina Chickadees cover their eggs during the egg-laying stage (Brewer 1961), which also may offer protection against parasitism. Studies have revealed lower levels of parasitism among some host species because they reject cowbird eggs (Strausberger and Ashley 1997) or because they do not provide adequate nutrition to cowbird young (Mills 1988).

During 2003, we monitored a pair of color-banded Carolina Chickadees nesting in natural cavities in a 2.63-ha woodlot located in Crawford County, Ohio (40° 46' N, 82° 58' W). The landscape is dominated by agriculture, with woodlots scattered throughout the county. On 5 June 2003, we discovered a Carolina Chickadee nest cavity from which most of a dead female Brown-headed Cowbird's tail was protruding. The cowbird appeared to have died only a day or two before we found the nest and appeared cramped in the cavity. The cavity entrance dimensions were 38 mm high × 42 mm wide, similar to average dimensions previously reported for Carolina Chickadee cavity entrances (Brewer 1961, Albano 1992, Mostrom et al. 2002). The cavity was 155 mm deep, and the nest was made with grass, hair, feathers, and plant down. We did not measure the female cowbird, but her size appeared to be normal. Inspection of the nest confirmed that the cowbird had laid one egg, but we found no chickadee eggs in the nest. Given the depth of the nest cavity, we can only as-

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sume that the cowbird died after laying the egg because she had no room to move inside the cavity and remove herself after entering the nest.

The chickadees' cavity appeared to have been freshly excavated and the nest inside was intact. The cavity was located in a dead branch (130 mm in diameter at the cavity entrance, broken but still barely attached to the tree) that was hanging 1.2 m above ground, and the opening was oriented north-northeast. The nest tree was located about 22 m from the northern edge of the woodlot. Two adult chickadees were heard nearby, but if they were the original cavity occupants, it appeared they had already abandoned the nest. This was the third known nesting attempt by this pair of chickadees in 2003. The first nest was discovered on 18 April, when one of the chickadees was observed entering a cavity. On 24 April, their nest appeared to be complete and covered, suggesting they had laid at least one egg. On 28 April, the nest was gone and a few sticks were found in the cavity. A House Wren (*Troglodytes aedon*) eventually completed a nest and laid eggs in the same cavity. On 4 May, again the chickadee pair was observed building a new nest in a freshly excavated cavity. On 13 May, the nest had been removed by a House Wren and sticks were placed in the cavity. There was no indication that the chickadees had laid eggs in the nest.

The small entrances of chickadee nest cavities likely prevent most Brown-headed Cowbirds from even attempting to parasitize their nests. Pribil and Picman (1997) showed that the size of cavity entrances could limit a Brown-headed Cowbird's ability to parasitize House Wren nests. They proposed that a 38-mm-diameter hole was the smallest that a Brown-headed Cowbird could voluntarily exit; however, they had placed the cowbirds in a nesting box (12 × 10 × 20 cm), which provided enough room for the birds to orient themselves toward the exit hole. If a cowbird is cramped in a cavity—as we observed—it may not be able to turn and face the cavity opening, making it more difficult to remove itself from the cavity. One record of a para-

sitized Black-capped Chickadee nest indicated that the cavity entrance was larger than normal, allowing intrusion by a cowbird (Packard 1936). Whereas some cavities may permit entry by Brown-headed Cowbirds, most cowbirds may not attempt to parasitize such nests because of the difficulty in removing themselves from the nests after they have completely entered the cavities. This is the first reported instance of a Brown-headed Cowbird mortality after egg-laying in the nest of a cavity-nesting species.

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